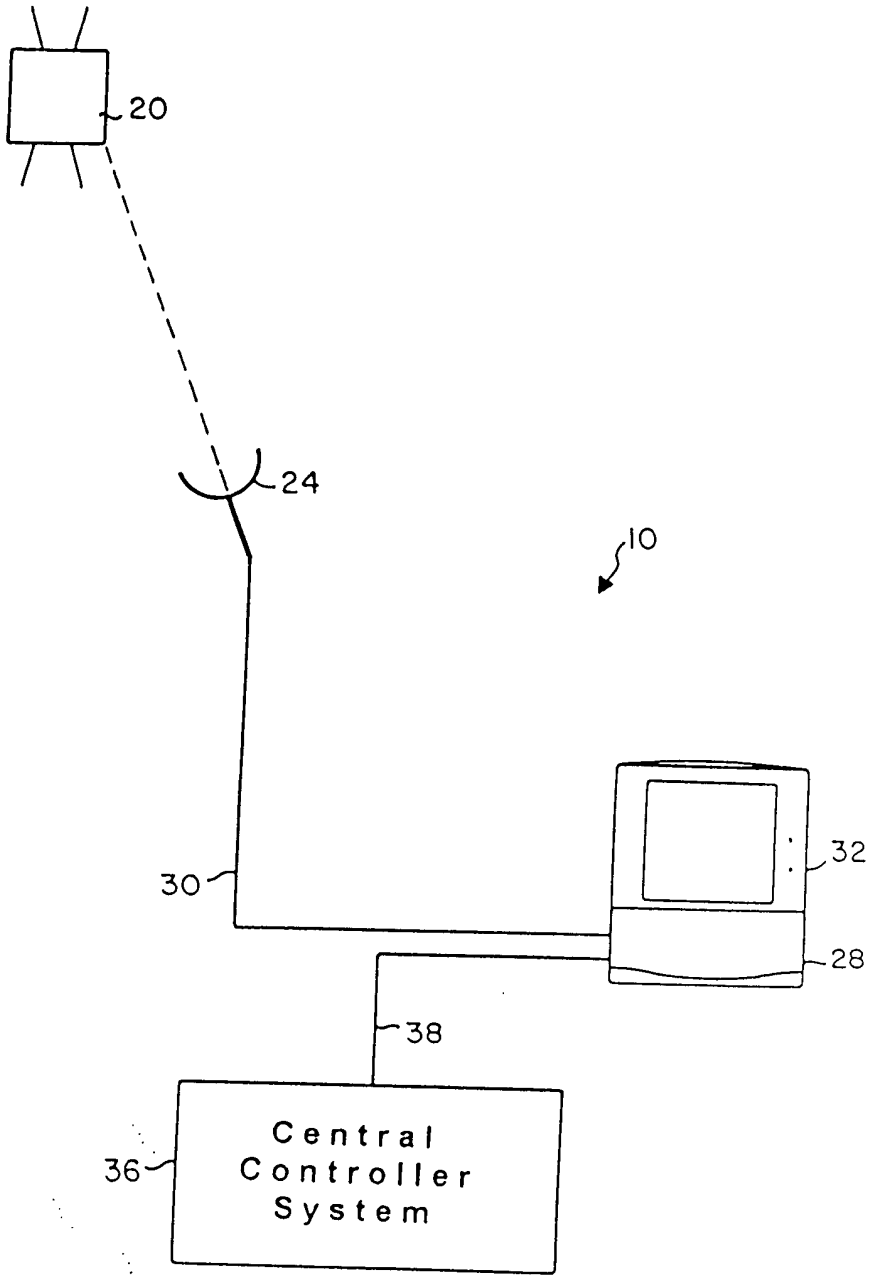


FIG. 1

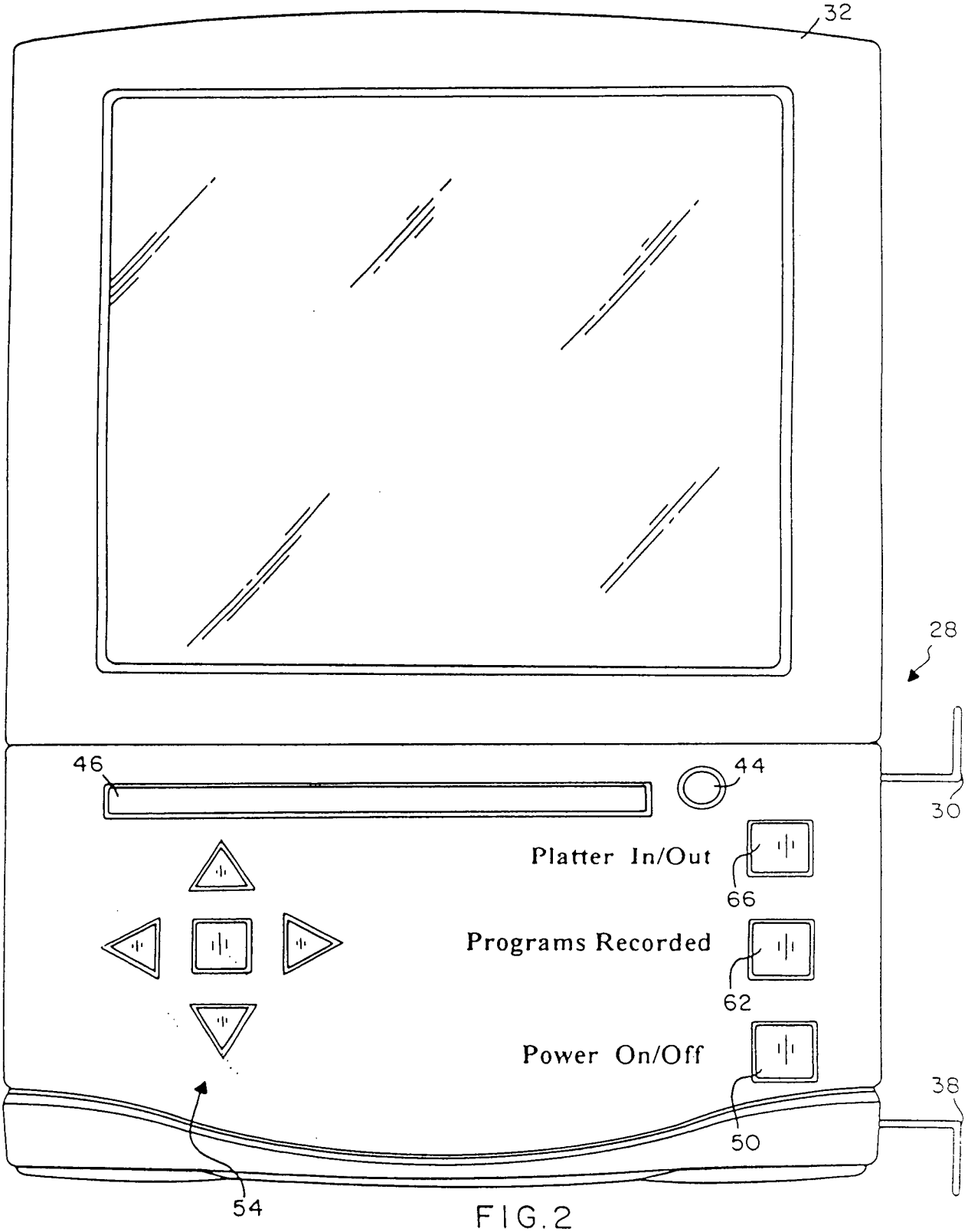

32
28
46
44
30
Platter In/Out
66
Programs Recorded
62
Power On/Off
50
38
54

FIG. 2

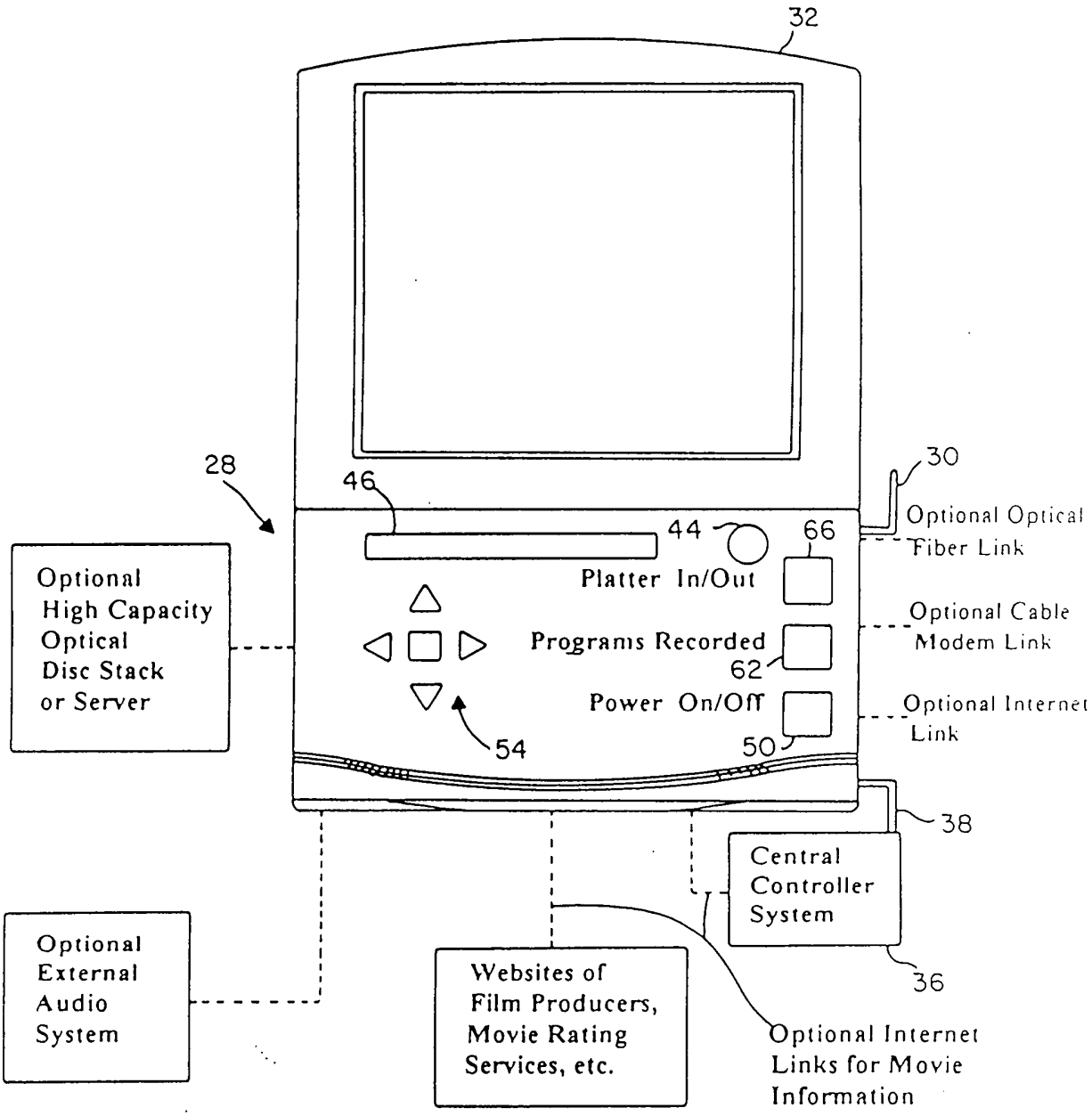

32
28
46
44
66
30
Optional Optical Fiber Link
Platter In/Out
Optional High Capacity Optical Disc Stack or Server
Programs Recorded
62
Optional Cable Modem Link
Power On/Off
Optional Internet Link
54
50
38
Central Controller System
36
Optional External Audio System
Websites of Film Producers, Movie Rating Services, etc.
Optional Internet Links for Movie Information

FIG. 2A

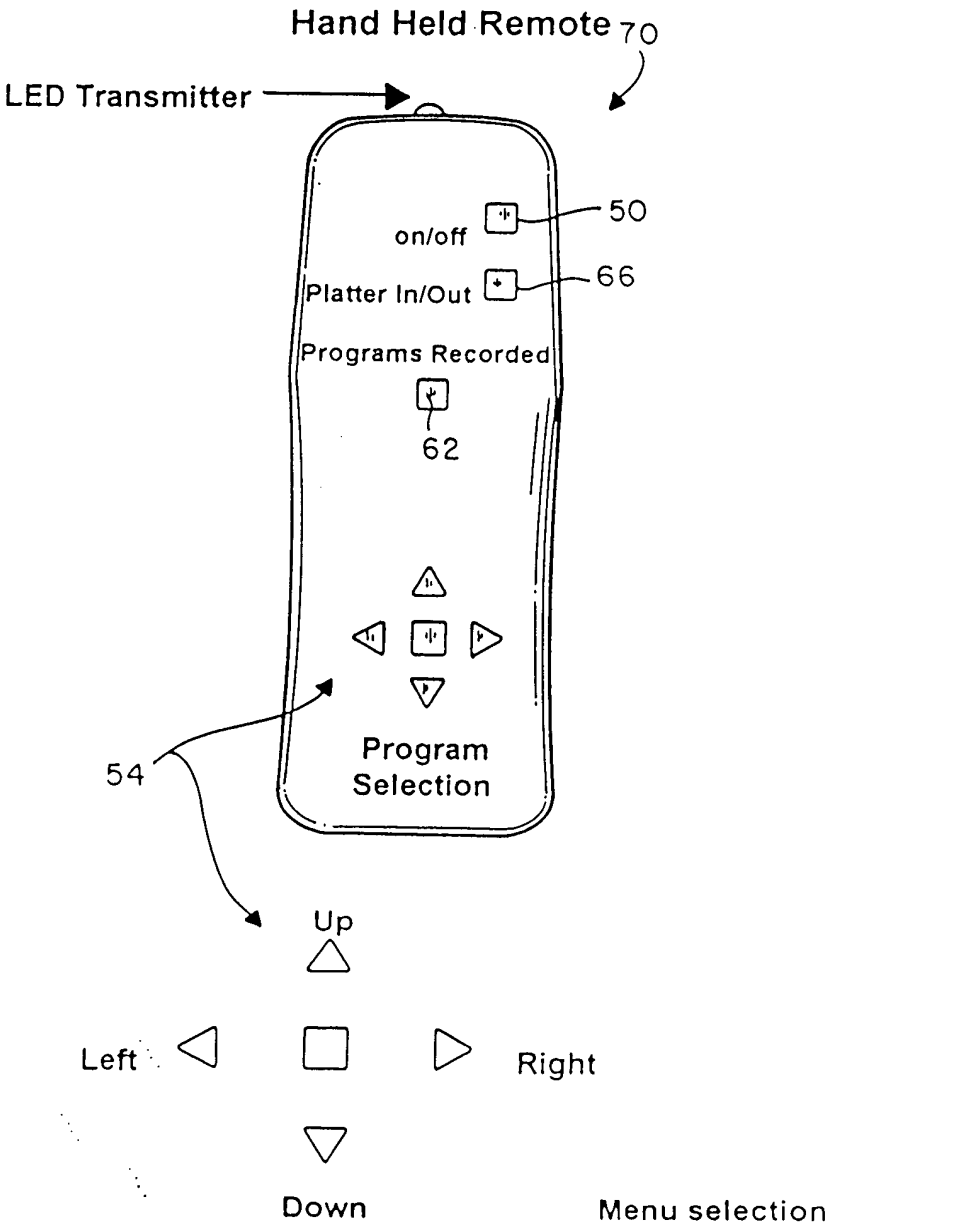

Hand Held Remote 70
LED Transmitter
on/off
50
Platter In/Out
66
Programs Recorded
62
54
Program Selection
Up
Left
Right
Down
Menu selection
Press twice to preselect
program when located

FIG. 3

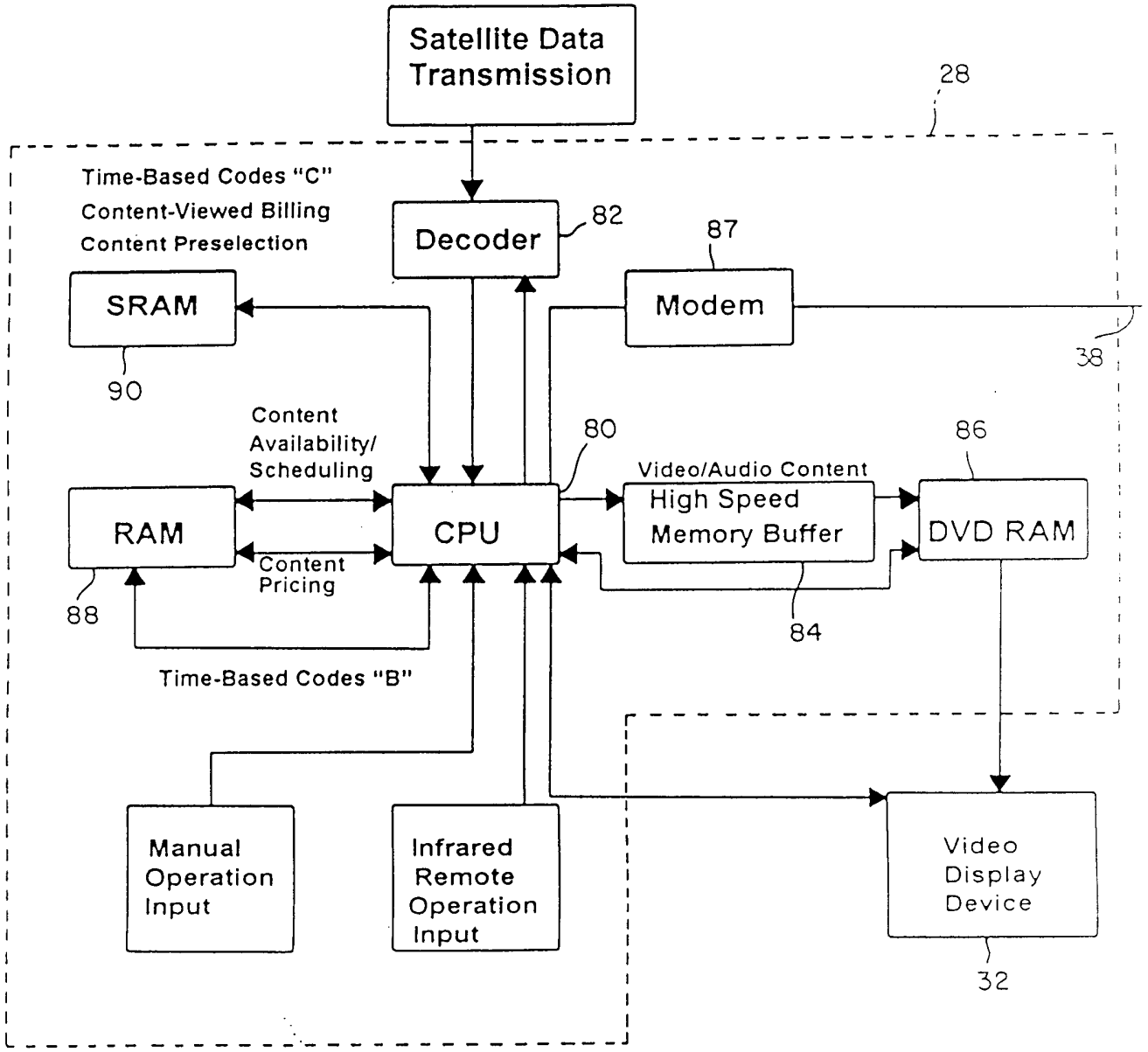

Satellite Data Transmission
28
Time-Based Codes "C"
Content-Viewed Billing
Content Preselection
Decoder
82
87
SRAM
Modem
90
38
Content Availability/ Scheduling
80
86
Video/Audio Content
RAM
CPU
High Speed Memory Buffer
DVD RAM
Content Pricing
88
84
Time-Based Codes "B"
Manual Operation Input
Infrared Remote Operation Input
Video Display Device
32

FIG. 4

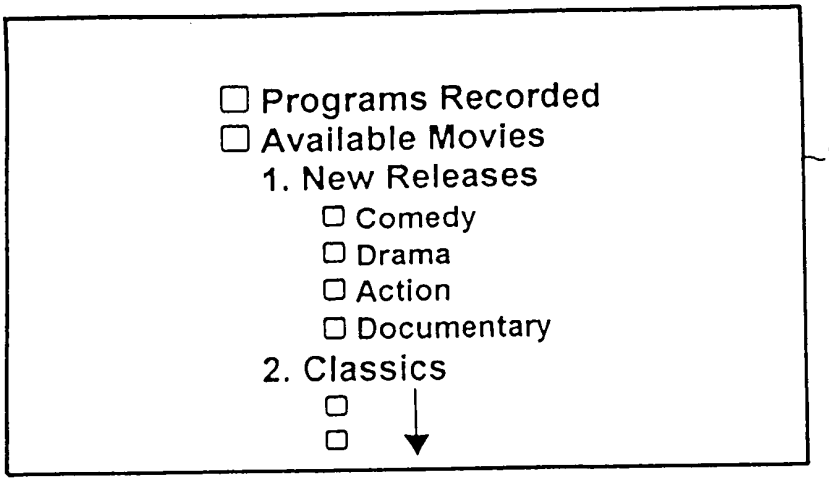


FIG. 5

SLOT	PROGRAM
1	Blank Disc
2	"Return of the Jedi"
3	No Disc
4	"To Sir with Love"
5	Blank Disc
6	"Sleepless in Seattle"
7	"Dave"
8	Blank Disc
9	No Disc
10	"True Grit"

110

FIG. 6

New Releases/Comedy (20 Titles)			
1	Title #1	120 mins.	PG
2	Title #2	98 mins.	R
3	Title #3	102 mins.	PG-13
4	Title #4	108 mins.	PG
5			
6			
7			
8			

120

FIG. 7

LEVEL I TIME-BASED SECURITY CODES

A	B	C
One 32 bit code in each movie header X 12 months X 100 years = 1200 32 bit codes.	One 32 bit code for each month chosen at the beginning of each month and transmitted by DBS.	One 32 bit code delivered each month by phone/ modem with billing query from central controller system. C provided only when customer is in good standing.

FIG. 8

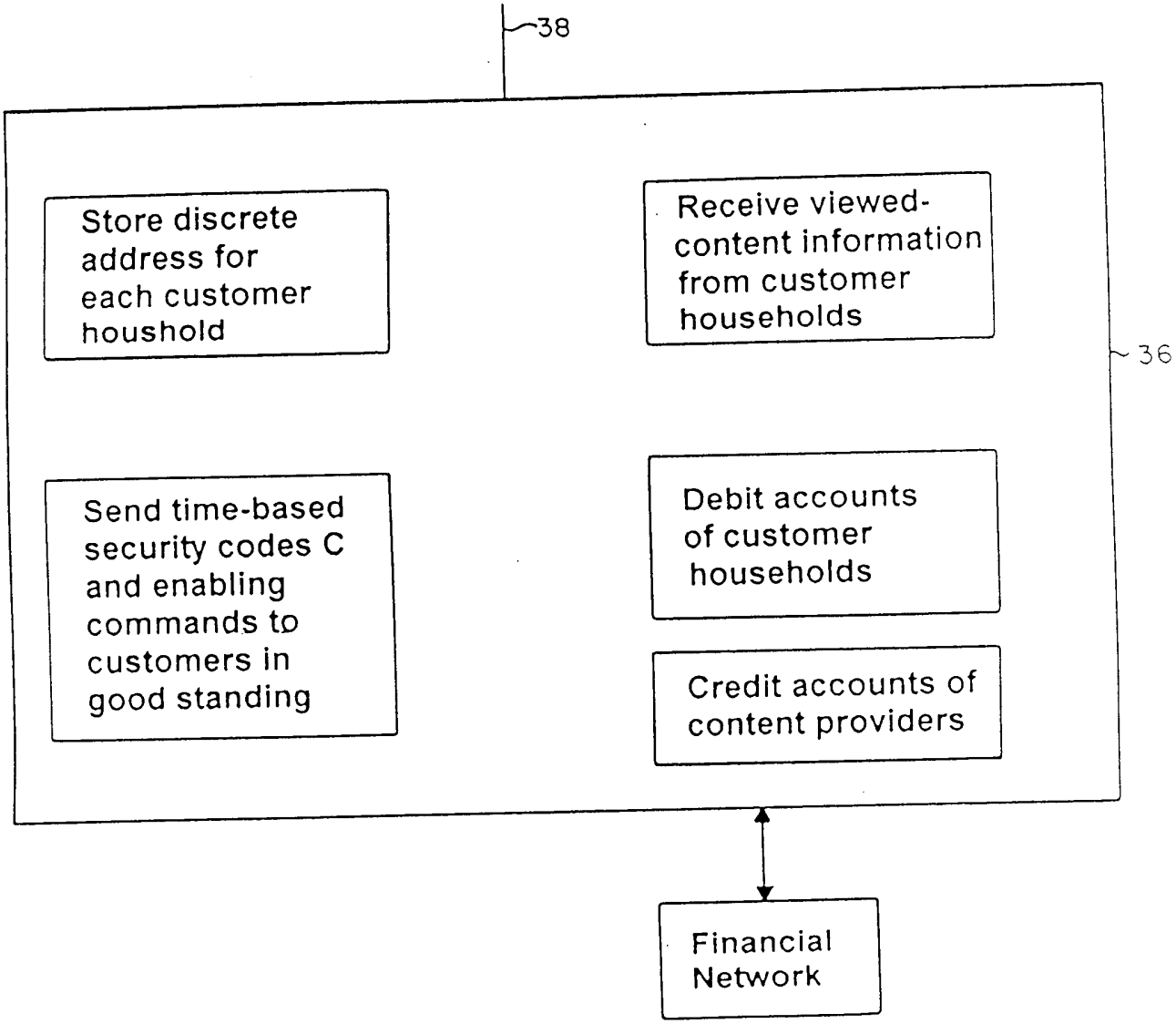

38
Store discrete address for each customer houshold
Receive viewed-content information from customer households
36
Send time-based security codes C and enabling commands to customers in good standing
Debit accounts of customer households
Credit accounts of content providers
Financial Network

FIG. 9

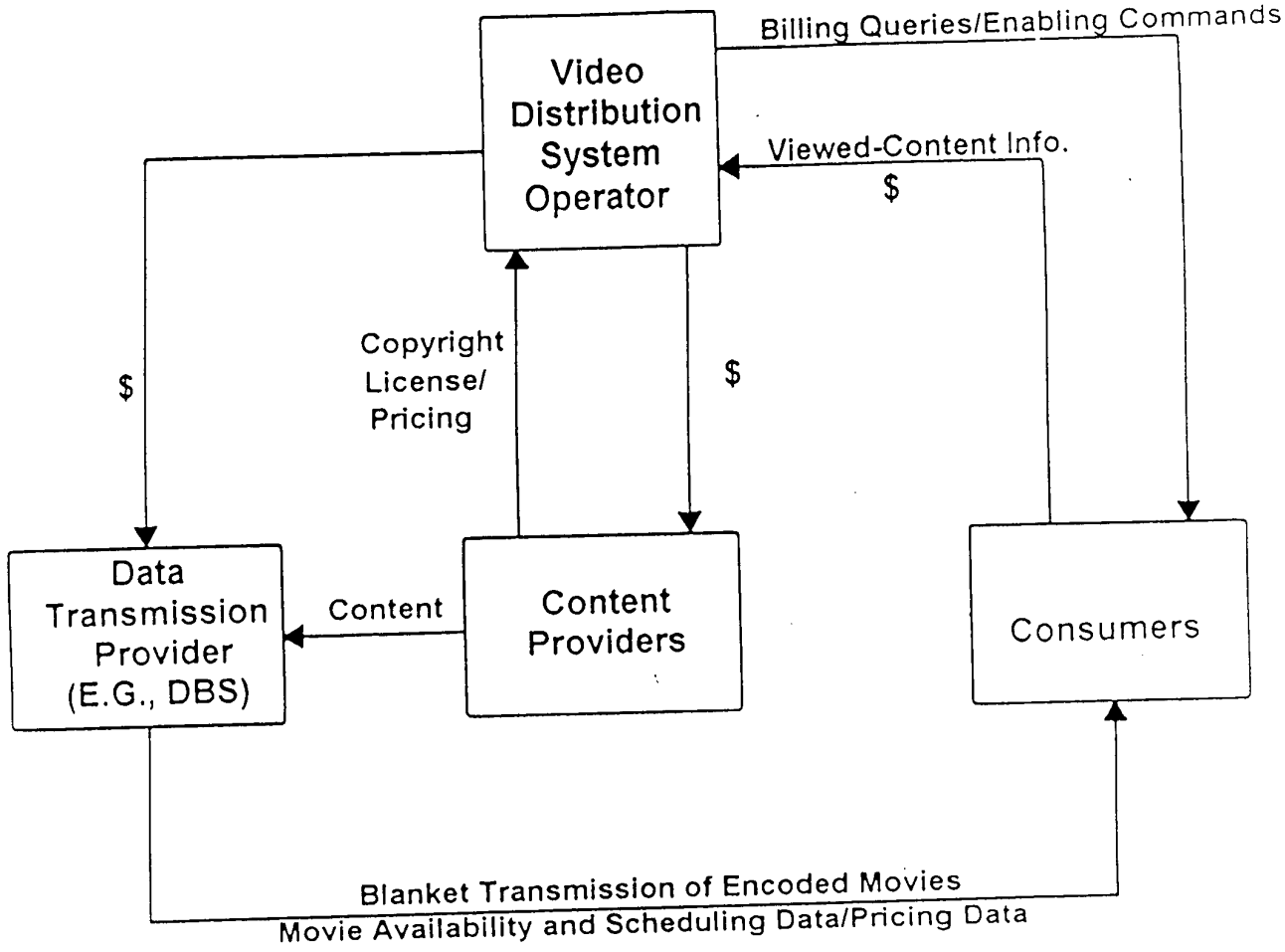

Video Distribution System Operator
Billing Queries/Enabling Commands
Viewed-Content Info.
$
$
Copyright License/ Pricing
$
Data Transmission Provider (E.G., DBS)
Content
Content Providers
Consumers
Blanket Transmission of Encoded Movies
Movie Availability and Scheduling Data/Pricing Data

FIG. 10

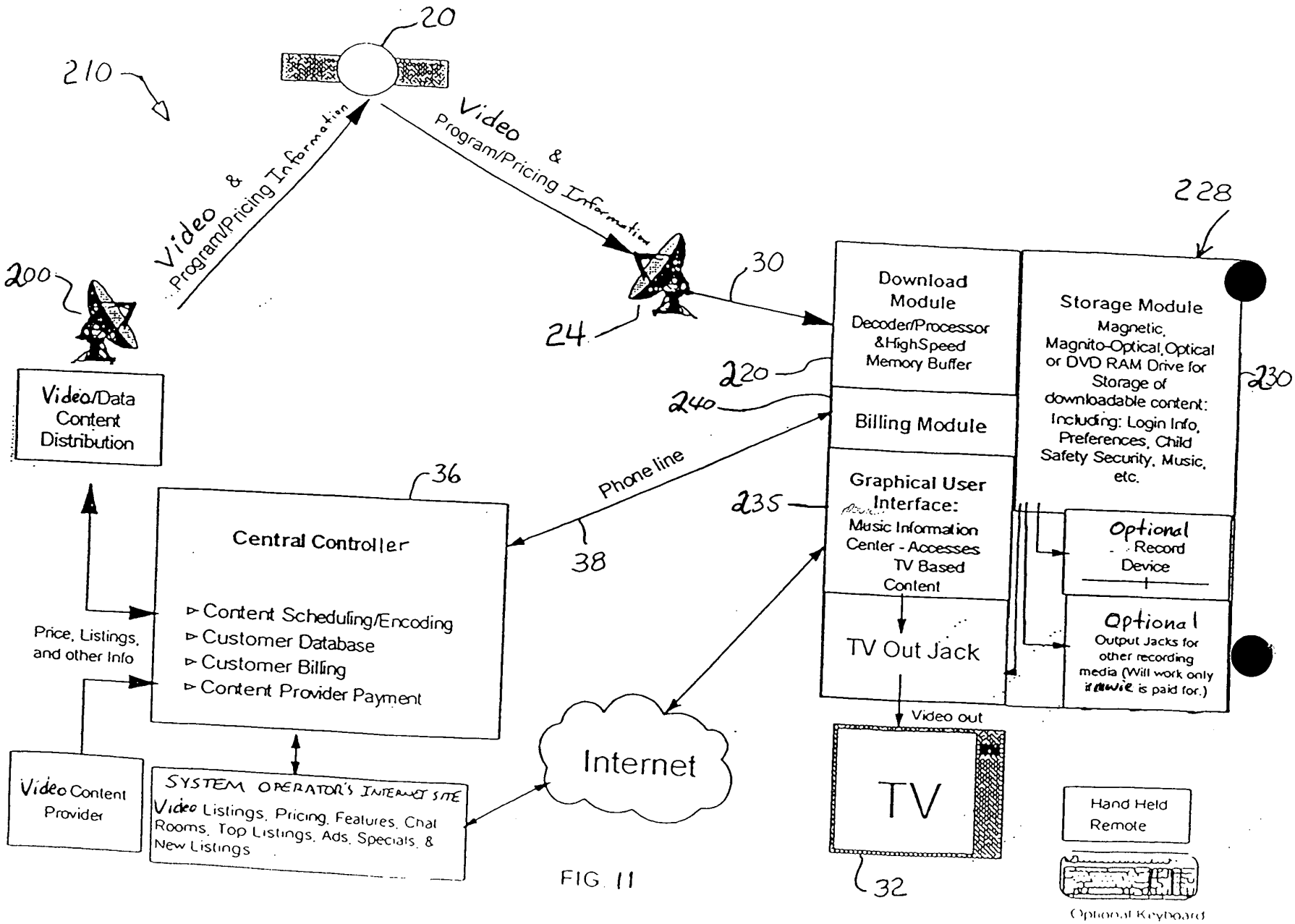

210
20
Video & Program/Pricing Information
Video & Program/Pricing Information
200
24
30
228
Download Module
Decoder/Processor & High Speed Memory Buffer
Storage Module
Magnetic, Magnito-Optical, Optical or DVD RAM Drive for Storage of downloadable content: Including: Login Info, Preferences, Child Safety Security, Music, etc.
230
220
240
Billing Module
Video/Data Content Distribution
Phone line
36
Central Controller
38
235
Graphical User Interface:
Music Information Center - Accesses TV Based Content
Optional - Record Device
Optional
Output Jacks for other recording media (Will work only if movie is paid for.)
Price, Listings, and other Info
Content Scheduling/Encoding
Customer Database
Customer Billing
Content Provider Payment
TV Out Jack
Video out
Internet
Video Content Provider
SYSTEM OPERATOR'S INTERNET SITE
Video Listings, Pricing, Features, Chat Rooms, Top Listings, Ads, Specials, & New Listings
TV
32
Hand Held Remote
Optional Keyboard

FIG. 11

Step	Mode Name	Description	Hardware Involved
	Account Setup	Happens when customer buys and hooks up The user station.	
1	Selection	Customer looks at recently updated "catalog' of available movie selections on his TV using the graphical user interface. Use remote to page through information.	User station, remote, customer TV, stored catalog
2	Ordering	Customer uses user station, remote and TV screen to order	User station, remote, customer TV
3	Downloading	Movies are downloaded during transmission hours as encrypted, compressed files through customer's satellite dish to hard disk in user station.	User station, satellite receiver
4	Viewing	Customer plays movie directly from hard drive with decryption/decompressing in real time.	User station,customer TV and speakers
5	Billing	Customer's account billed later by modem or Internet communication with central controller.	User station
6	Optional "Library" Movie Delivery	Full-quality movie on selected medium (e.g. DVD) that can be played on any DVD player is burned with watermark.	User station, DVD burner

Fig. 12

SELECT MOVIE TYPE PREFERENCES	
Action	Documentaries
Romantic Comedy	Foreign Language
Science Fiction	Musicals
Combat	Westerns
Animated	Political
Family (G)	Suspense

Fig. 13

SECOND LEVEL MOVIE PREFERENCES			
Favorite Movie Stars (Male)	Favorite Movie Stars (Female)	Favorite Directors	Preferred Rating(s)
Mel Gibson Tom Hanks	Julia Roberts Meg Ryan	George Lucas John Doe	G PG PG-13 R X

Fig. 14

US 2005/0086260 A1 Apr. 21, 2005

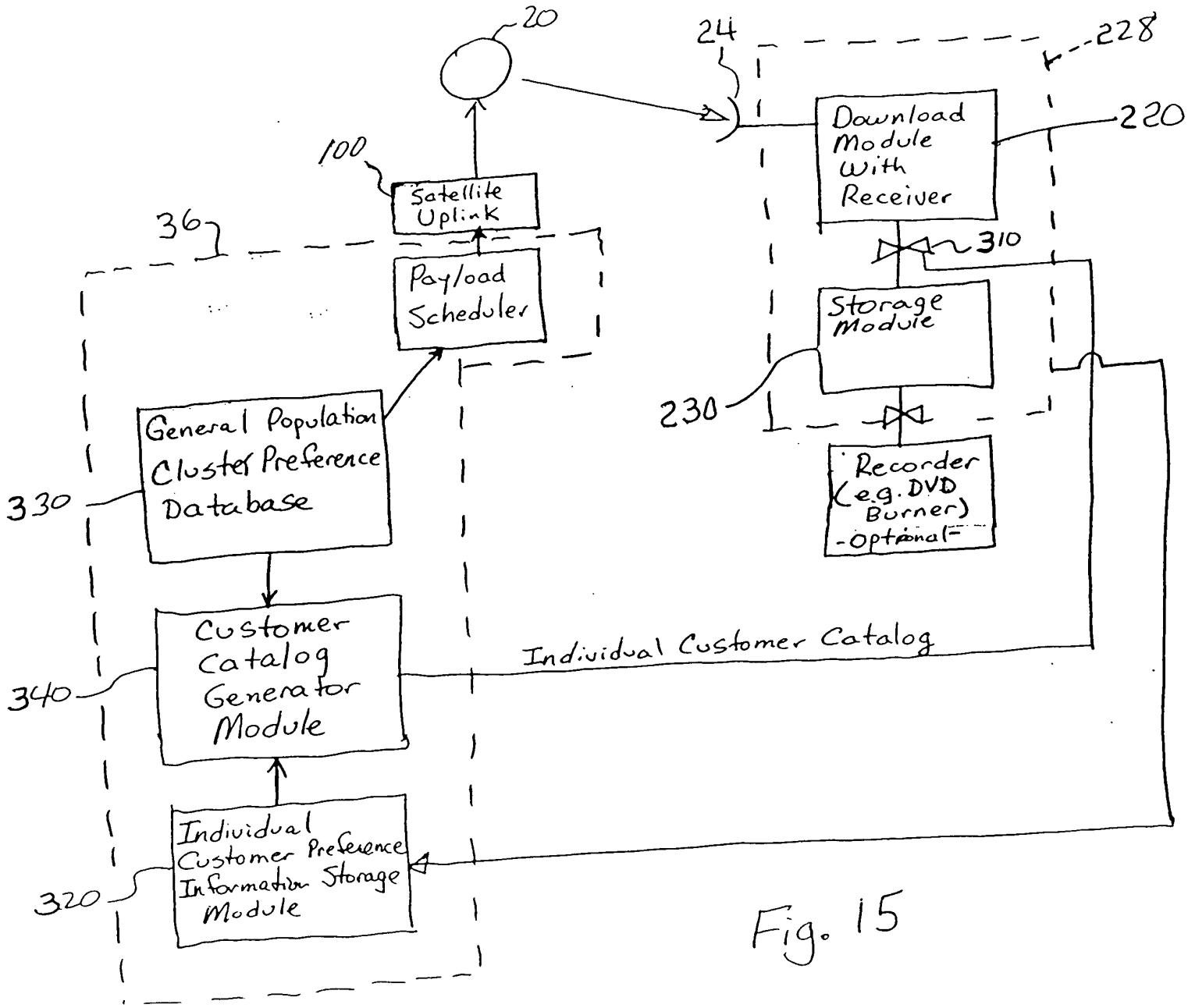


Fig. 15

Promotion-based Streaming

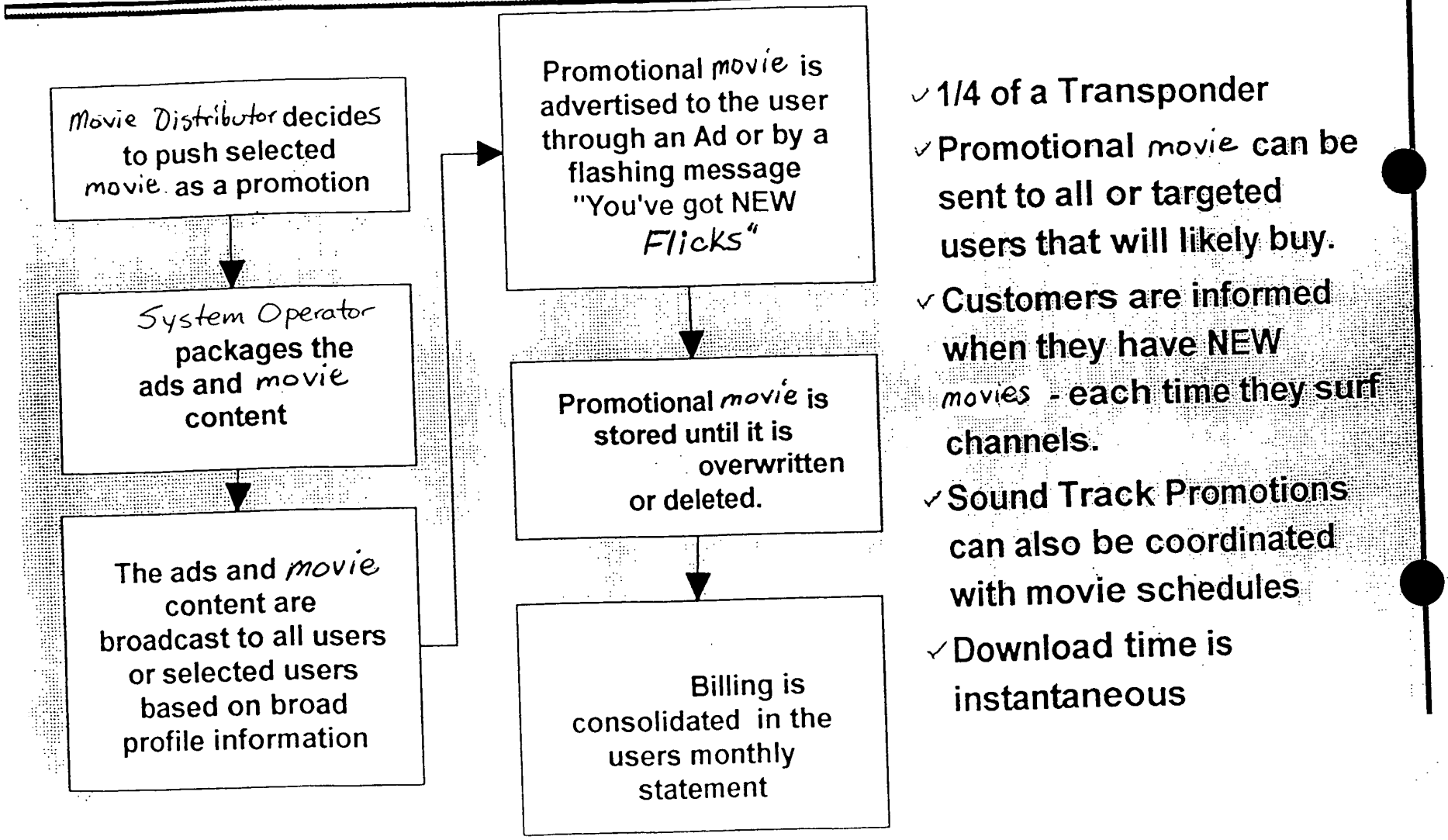


Fig. 16

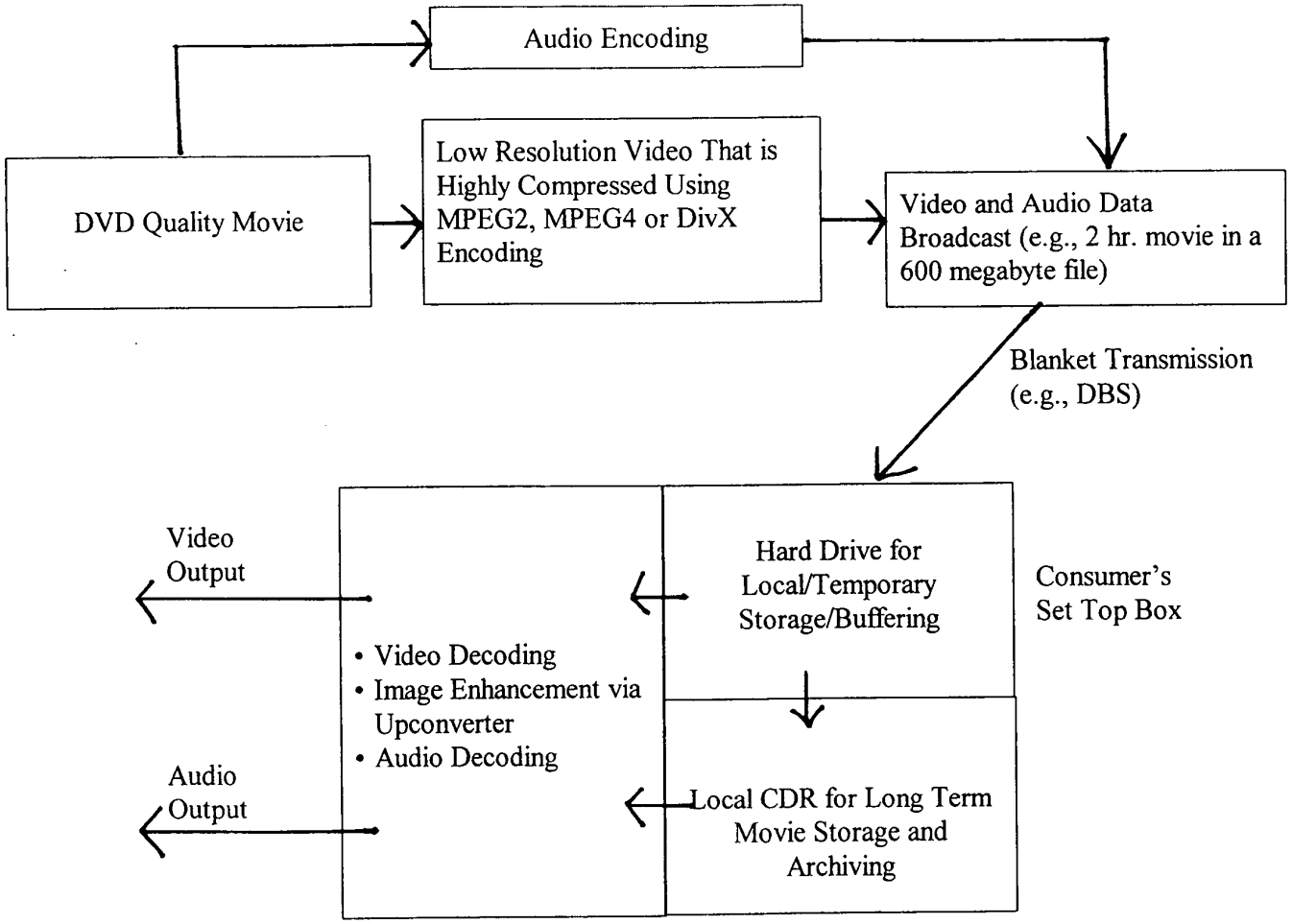

Audio Encoding
DVD Quality Movie
Low Resolution Video That is Highly Compressed Using MPEG2, MPEG4 or DivX Encoding
Video and Audio Data Broadcast (e.g., 2 hr. movie in a 600 megabyte file)
Blanket Transmission (e.g., DBS)
Video Output
• Video Decoding
• Image Enhancement via Upconverter
• Audio Decoding
Audio Output
Hard Drive for Local/Temporary Storage/Buffering
Local CDR for Long Term Movie Storage and Archiving
Consumer's Set Top Box

Figure 17

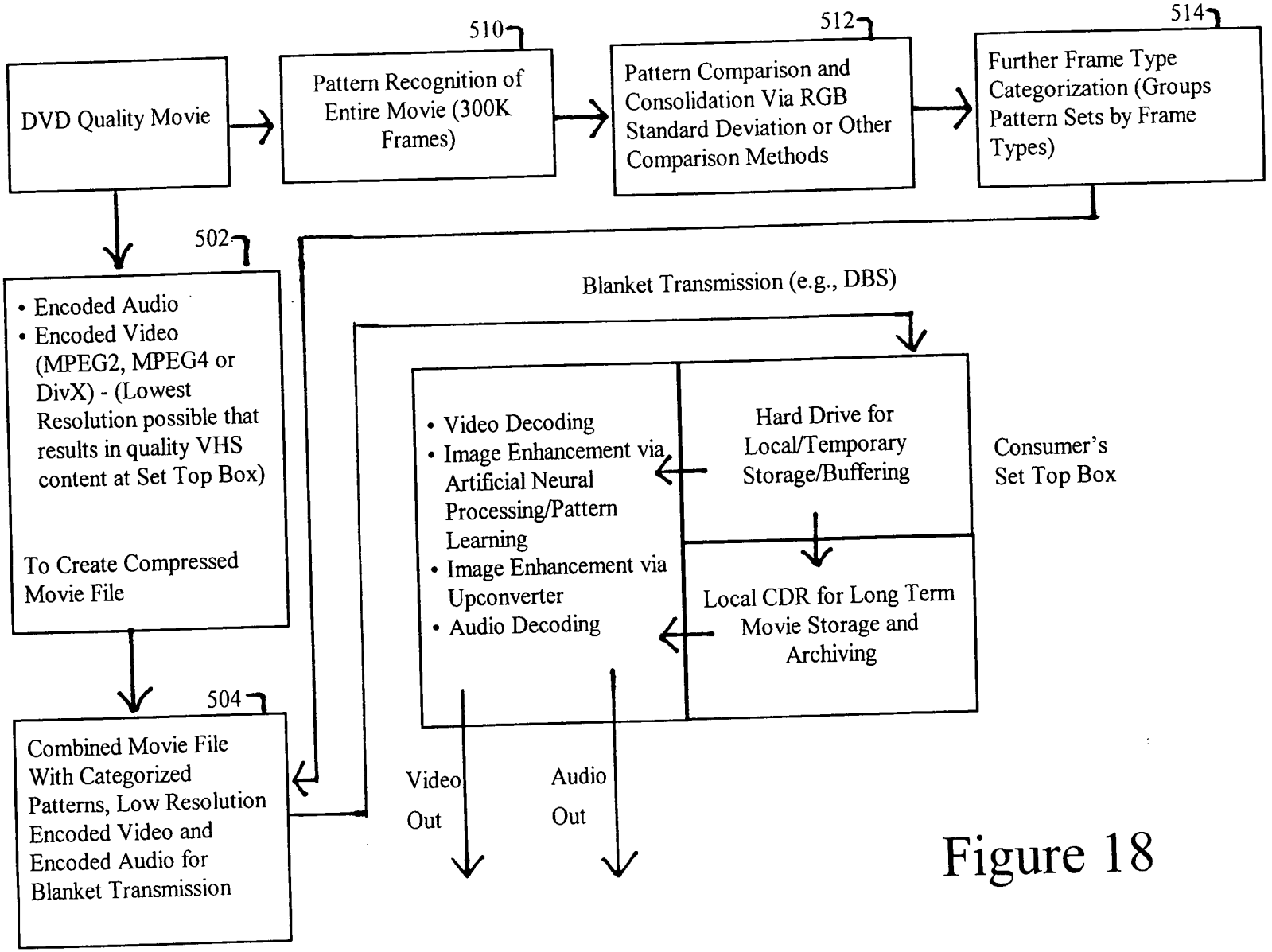

DVD Quality Movie
510
Pattern Recognition of Entire Movie (300K Frames)
512
Pattern Comparison and Consolidation Via RGB Standard Deviation or Other Comparison Methods
514
Further Frame Type Categorization (Groups Pattern Sets by Frame Types)
502
• Encoded Audio
• Encoded Video (MPEG2, MPEG4 or DivX) - (Lowest Resolution possible that results in quality VHS content at Set Top Box)
To Create Compressed Movie File
504
Combined Movie File With Categorized Patterns, Low Resolution Encoded Video and Encoded Audio for Blanket Transmission
Blanket Transmission (e.g., DBS)
• Video Decoding
• Image Enhancement via Artificial Neural Processing/Pattern Learning
• Image Enhancement via Upconverter
• Audio Decoding
Hard Drive for Local/Temporary Storage/Buffering
Local CDR for Long Term Movie Storage and Archiving
Consumer's Set Top Box
Video Out
Audio Out

Figure 18

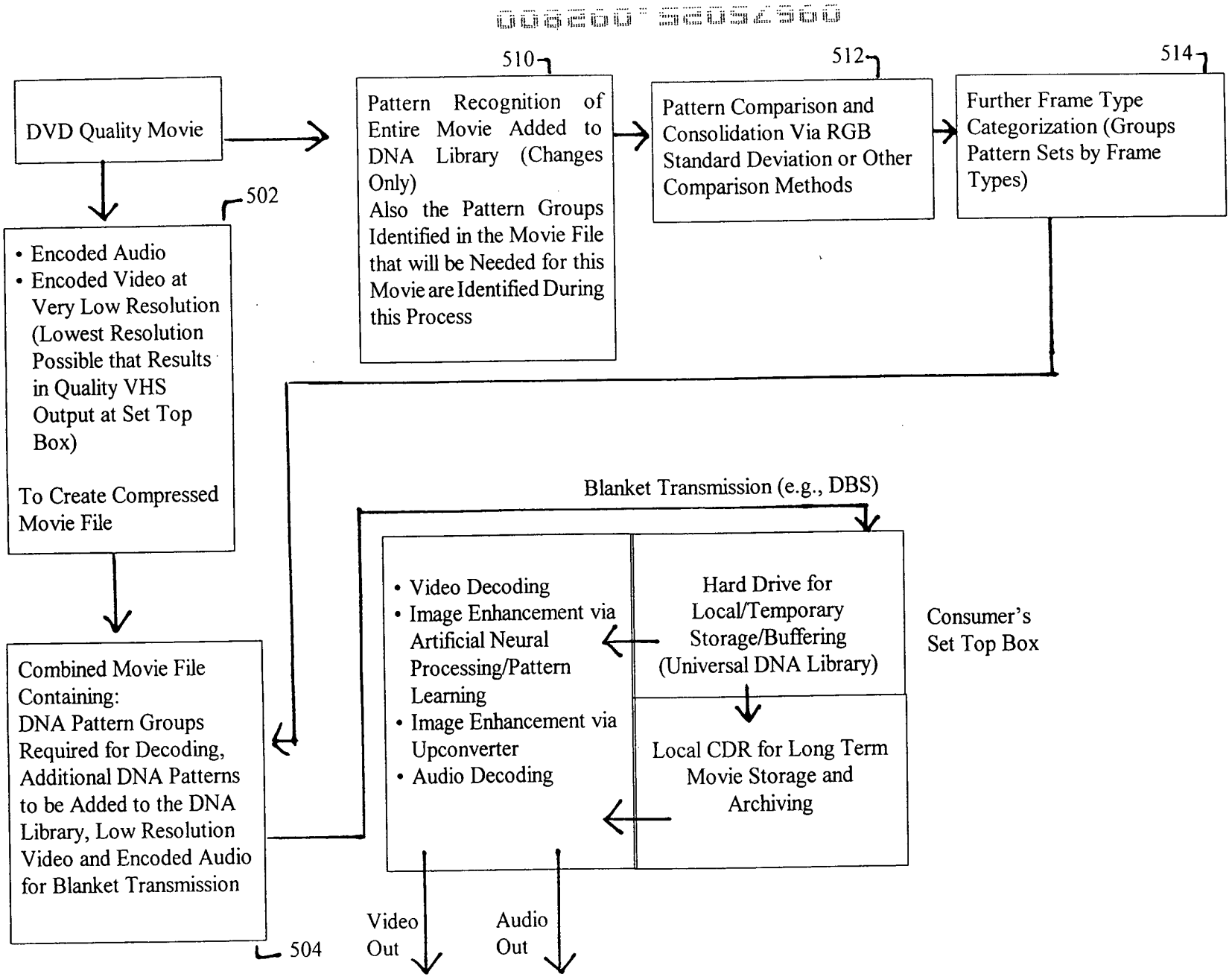

DVD Quality Movie
510
Pattern Recognition of Entire Movie Added to DNA Library (Changes Only)
Also the Pattern Groups Identified in the Movie File that will be Needed for this Movie are Identified During this Process
512
Pattern Comparison and Consolidation Via RGB Standard Deviation or Other Comparison Methods
514
Further Frame Type Categorization (Groups Pattern Sets by Frame Types)
502
• Encoded Audio
• Encoded Video at Very Low Resolution (Lowest Resolution Possible that Results in Quality VHS Output at Set Top Box)
To Create Compressed Movie File
Blanket Transmission (e.g., DBS)
• Video Decoding
• Image Enhancement via Artificial Neural Processing/Pattern Learning
• Image Enhancement via Upconverter
• Audio Decoding
Hard Drive for Local/Temporary Storage/Buffering (Universal DNA Library)
Local CDR for Long Term Movie Storage and Archiving
Consumer's Set Top Box
Combined Movie File Containing:
DNA Pattern Groups Required for Decoding, Additional DNA Patterns to be Added to the DNA Library, Low Resolution Video and Encoded Audio for Blanket Transmission
504
Video Out
Audio Out

Figure 19

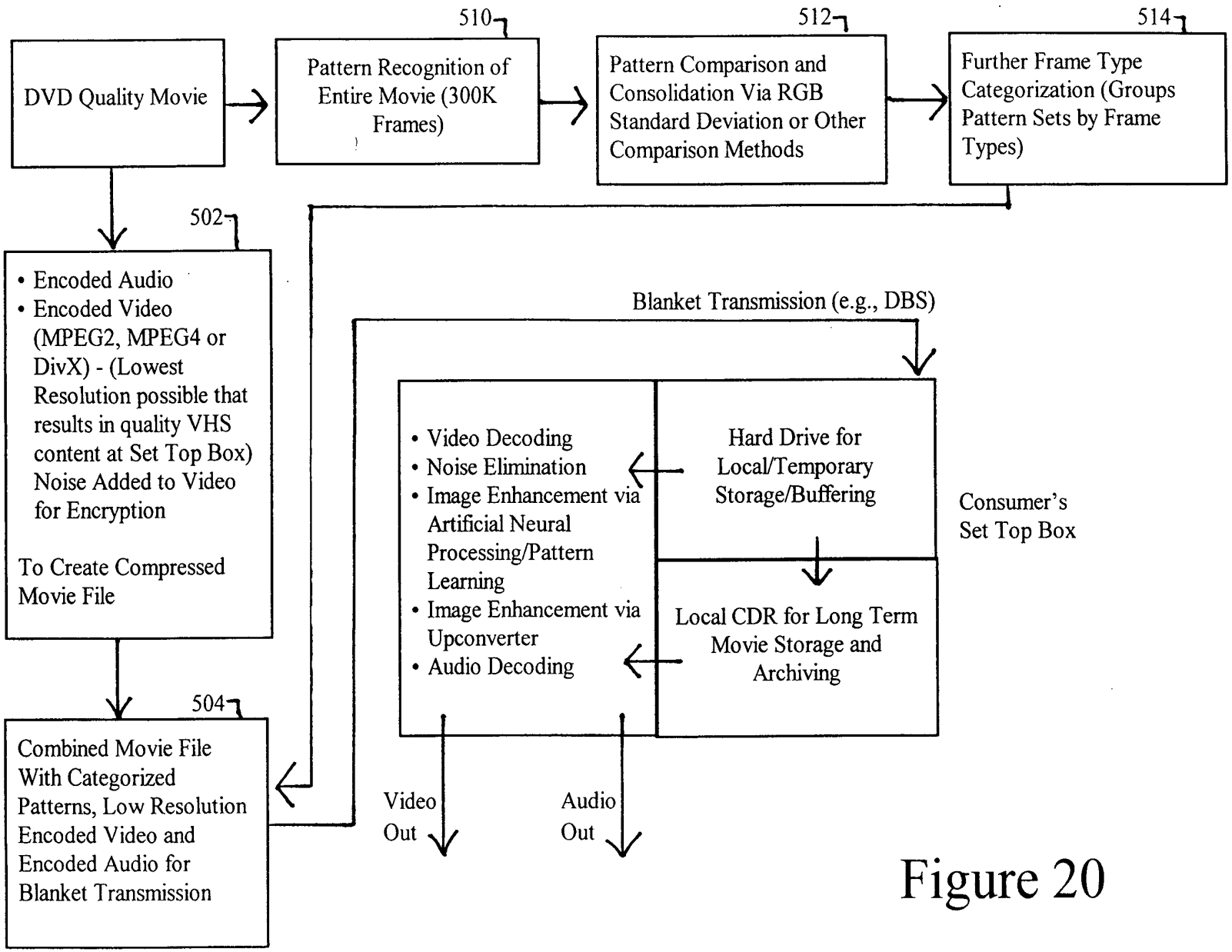

DVD Quality Movie
510
Pattern Recognition of Entire Movie (300K Frames)
512
Pattern Comparison and Consolidation Via RGB Standard Deviation or Other Comparison Methods
514
Further Frame Type Categorization (Groups Pattern Sets by Frame Types)
502
• Encoded Audio
• Encoded Video (MPEG2, MPEG4 or DivX) - (Lowest Resolution possible that results in quality VHS content at Set Top Box) Noise Added to Video for Encryption
To Create Compressed Movie File
504
Combined Movie File With Categorized Patterns, Low Resolution Encoded Video and Encoded Audio for Blanket Transmission
Blanket Transmission (e.g., DBS)
• Video Decoding
• Noise Elimination
• Image Enhancement via Artificial Neural Processing/Pattern Learning
• Image Enhancement via Upconverter
• Audio Decoding
Hard Drive for Local/Temporary Storage/Buffering
Local CDR for Long Term Movie Storage and Archiving
Consumer's Set Top Box
Video Out
Audio Out

Figure 20

DNA Pattern Library

Frame Group I	Frame Group 2	Frame Group 3	Frame Group n
Pattern 1	Pattern 1	Pattern 1	Pattern 1
Pattern 2	Pattern 2	Pattern 2	Pattern 2
Pattern 3	Pattern 3	Pattern 3	Pattern 3
•	•	•	•
•	•	•	•
•	•	•	•
Pattern N	Pattern N	Pattern N	Pattern N

Figure 21

Video Content File

- Required Frame Groups: 1, 4, 7, 9, ... n
- Additional Patterns to be Added to DNA Library Groups
- Highly Compressed/Noise Added Video File

Figure 22

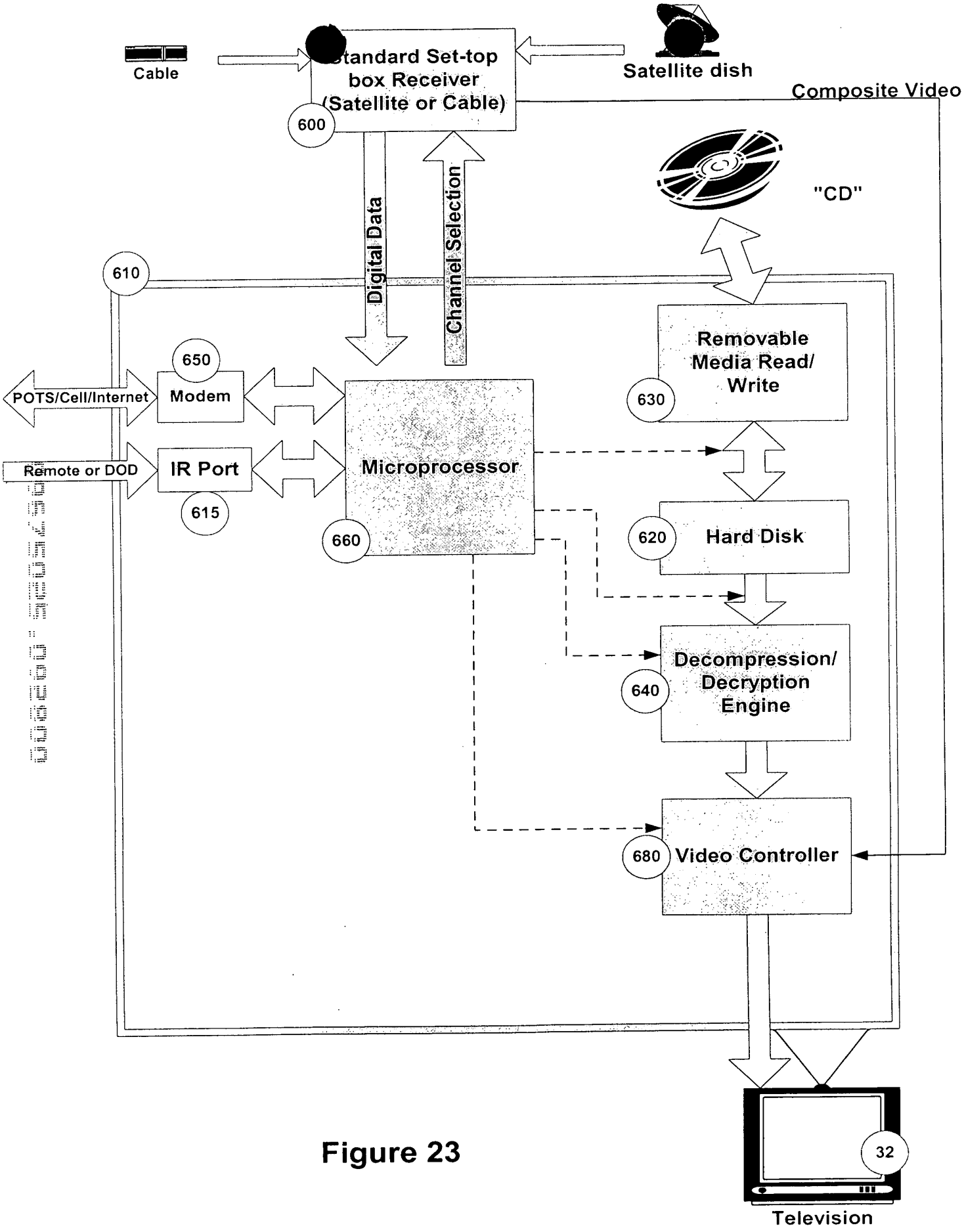

Cable
Standard Set-top box Receiver (Satellite or Cable)
600
Satellite dish
Composite Video
"CD"
Digital Data
Channel Selection
610
650
Modem
POTS/Cell/Internet
Remote or DOD
IR Port
615
Microprocessor
660
Removable Media Read/ Write
630
620
Hard Disk
Decompression/ Decryption Engine
640
680
Video Controller
32
Television

Figure 23

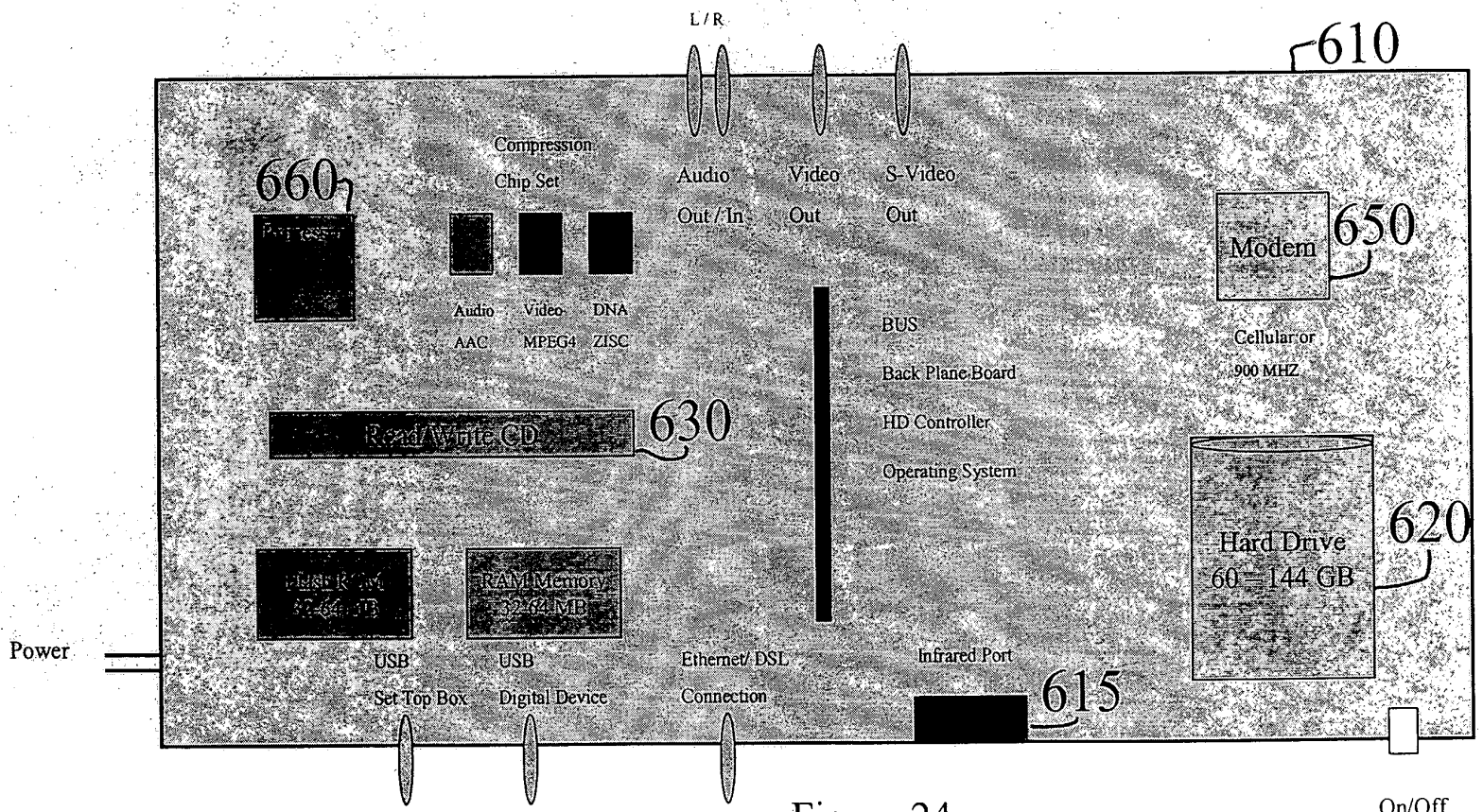

L / R
610
660
Compression
Chip Set
Audio
Out / In
Video
Out
S-Video
Out
Modem
650
Audio
AAC
Video
MPEG4
DNA
ZISC
BUS
Back Plane Board
HD Controller
Operating System
Cellular or
900 MHZ
Read/Write CD
630
RAM Memory
32-64 MB
Hard Drive
60 – 144 GB
620
Power
USB
Set Top Box
USB
Digital Device
Ethernet/ DSL
Connection
Infrared Port
615
On/Off

Figure 24

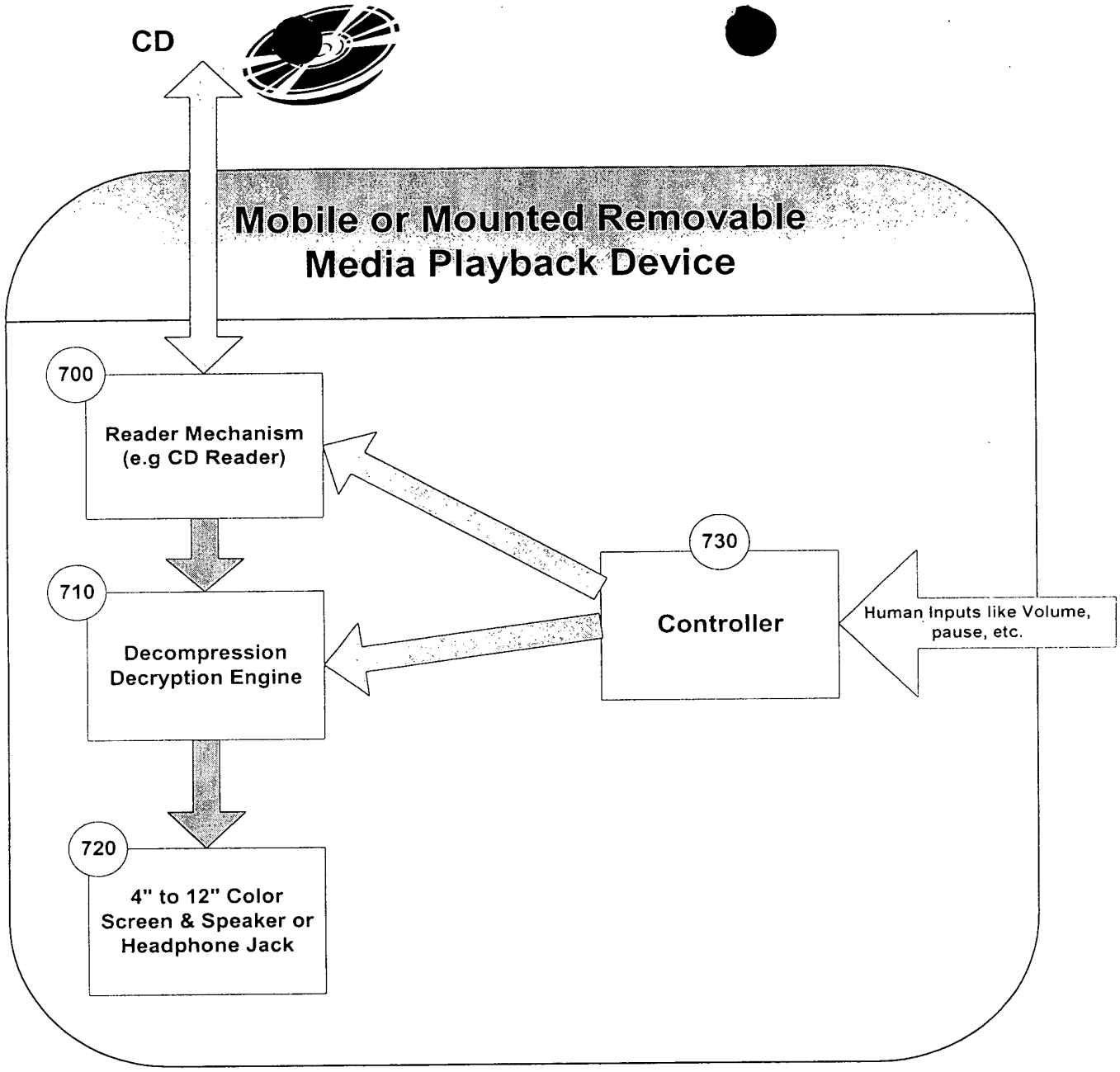
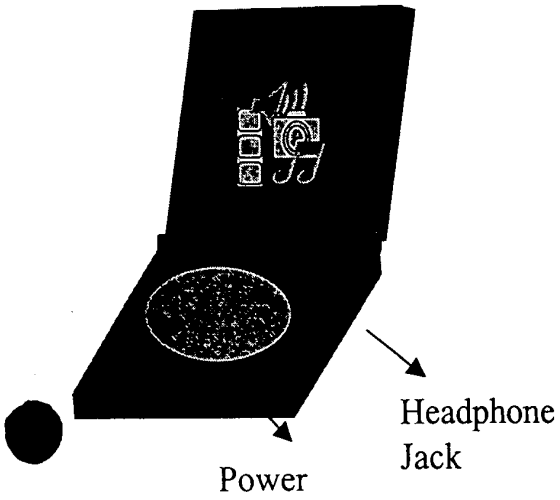

CD
Mobile or Mounted Removable Media Playback Device
700
Reader Mechanism (e.g CD Reader)
710
Decompression Decryption Engine
720
4" to 12" Color Screen & Speaker or Headphone Jack
730
Controller
Human Inputs like Volume, pause, etc.

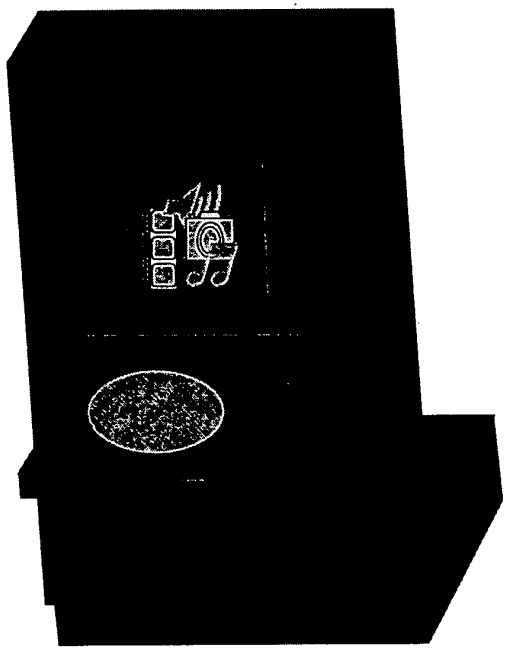
Figure 25



Mobile Player

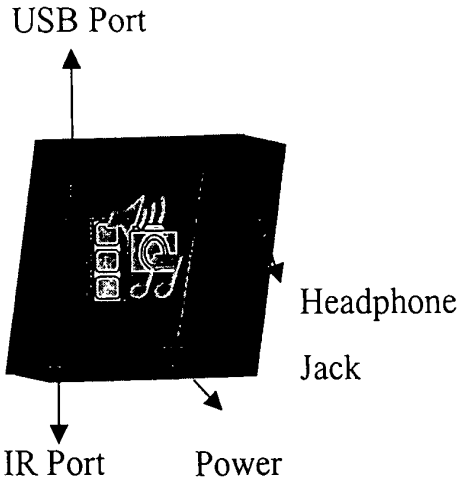
Fig. 26

Seat Back
Or Dashboard



Mounted Player

Fig. 27



Hard Drive
Player

Fig. 28

09675925 _092900